

Orange R., south to about Port Nolloth on the coast and in the south in the interior of Little Namaqualand to Clanwilliam, Calvinia and Citrusdal, thence northeast to the middle Orange R. Both nominate *layardi* and *subsolanum* are separable in the entire lack of white in the wings and face, such parts being olivaceous grey (about the Deep Mouse Gray of Ridgway).

Three subspecies can be admitted in the present species: *P. l. barnesi*, *P. l. layardi* and *P. l. subsolanum*, the first-named in two widely sundered populations. They are based entirely on plumage characters, no significant differences having been detected in their linear measurements.

Parisoma layardi barnesi Vincent 1948, *Bull. Brit. Orn. Cl.* 68, p. 145: Lekhalabaletsi R. valley above confluence of the Jareteng and Lekhalabaletsi Rivers, Lesotho at 29°17'S, 29°24'E, 8900 ft.

Upper-parts and wings dark bluish leaden grey (about Dark Neutral Gray of Ridgway), and occasionally with a well-defined narrow white superciliary stripe over the lore. Below, white with narrow blackish streaking over the fore-throat and with the breast and sides moderately washed with light neutral grey. The wings with the outer vanes of the remiges broadly edged with white, this carried to the tertials, forming a well-defined white wing-stripe.

Range. Occurs in two widely sundered populations, the eastern one confined to the highlands of Lesotho and adjacent northeastern parts of Cape Province (Drakensberg Range and the interior ranges of the Maluti Mts). A second undifferentiated population is present along the western Cape where it occurs in maritime vegetation from the Port Nolloth district in the north, south narrowly to the southwestern Cape. Localities:- *W. Cape*: Port Nolloth, Wallekraal, Twee Dam (Springbok), Karoopoort (Koue Bokkeveld), Kliprand 27 m N. of Garies, Bitterfontein, Lootsberg Pass, Ysterfontein, Melkbos, Muizenberg. *E. Cape*: Naude's Nek Pass, Strandfontein. *Lesotho*: Marakabeis, mountains E. of Maseru.

Remarks. The type-specimens of *P. layardi* (Clanwilliam) and *P. l. aridicola* were made available for comparison by the South African Museum, Cape Town. The *layardi* type had been mounted and its coloration is now wholly unreliable.

Parisoma layardi layardi Hartlaub 1862, *Ibis* (1)4, p. 147: Zwartland, Malmesbury district; corrected to Clanwilliam, western Cape, by Winterbottom 1957, *Ostrich* 28, p. 235.

Parisoma layardi aridicola Winterbottom 1958, *Bull. Brit. Orn. Cl.* 78, p. 148: Noisabis, Richtersveld, northwestern Cape.

Upper-parts and wings distinctly lighter, less dark bluish-grey, than in *P. l. barnesi*, being about Deep Mouse Gray of Ridgway, and without white over the wings and face, the outer vanes of the flight-feathers greyish olive-buff.

Compared to *subsolanum* differs in the starkly whiter ground to the fore-throat, and the greater extent of the mid-ventral white. Upper-parts lighter olivaceous-grey.

Range. The highlands of Damaraland, Namibia, south in the west of Namibia, inland of the Namib Desert, to the Richtersveld and basin

of the lower Orange to the coast at Port Nolloth. In the interior and east of Little Namaqualand, south to Clanwilliam and the Citrusdal areas, and east to Upington, Carnarvon and Victoria West. Localities:- *Namibia*: Great Karas Mtns. *Cape*: Goodhouse, Namees, Noisabis, Pofadder, Upington, Port Nolloth, Carnarvon, Kamiesberg, Garies, Vanrhynsdorp, Lokenburg (Calvinia), Clanwilliam, Citrusdal, and localities immediately to the east of southern N. Cape.

Remarks. One or two specimens from near Garies and Vanrhynsdorp in Little Namaqualand show a small amount of white in the remiges, revealing a measure of intergradation towards *P. l. barnesi*, although retaining the diagnostic lighter mouse-grey to the upper-parts and wings.

Parisoma layardi subsolanum Clancey 1963, *Durban Mus. Novit.* 6, p. 253: Aprilskraal siding, Molteno, northeastern Cape.

Compared with *P. layardi* differs in being less starkly white over the ground of the fore-throat, and with the breast darker, more buff, less whitish, and with the sides of the body and the flanks much darker grey, with less white medio-ventrally. Upper-parts and wings slightly darker, especially over the pileum, but not as dark and blue as in *P. l. barnesi*.

Range. The highlands of the southwestern Cape, extending east through the southern mountain ranges and adjacent regions of the Karoo to the eastern and northern Cape and the Orange Free State. Localities:- Hanover, Williston, Laingsburg, Oudtshoorn, Campherpoort (East London), Huisrivierpas, Danebury, Graaff-Reinet, Rossouw, Murraysburg, Jamestown, Teebus, Lelykpoortjie, Molteno, Sterkstroom, Griquatown and Aliwal North.

Remarks. This subspecies lies close to the nominate one in lacking a starkly white wing-stripe and loral mark, but its darker ventral parts in a sense link the two dark forms of *P. l. barnesi* lying to the east and west of it.

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Range extensions of cloud forest birds from the high Andes of Ecuador: new sites for rare or little-recorded species

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A comparative survey was made of the avifauna at ten sites with humid forest in the temperate zone of Ecuador (Fig. 1) in January and February 1995 and 1996. The major comparison of diversities will be published elsewhere, but we here give the records that represent altitudinal or southward range extensions, and, for rare or little-recorded species, we also list the sites where we found them. Most records are from within the study sites, which all ranged from 3000 to 3350 m in altitude, but some are from above or just below the sites, and for some records, additional observations have been included.

Abbreviations of localities are (province and locality coordinates in parenthesis): East slope (north to south): Oyacachi=below Oyacachi (Napo: 00°13'S, 78°02'W); Anatenorio=Río Anatenorio (Napo: 00°59'S, 78°17'W); Matanga=Páramos de Matanga (Morona-Santiago: 03°16'S, 78°54'W); Toledo=Cerro Toledo (Zamora-Chinchiipe: 04°23'S, 79°06'W); Lagunillas=Cordillera Las Lagunillas (Zamora-Chinchiipe: 04°46'S, 79°25'W). West slope (north to south): Intag=Intag (Imbabura: 00°20'N, 78°25'W); Corazón=Volcán Corazón (Pichincha: 00°33'S, 78°43'W); Salinas=10 km northwest of Salinas (Bolívar: 01°21'S, 79°05'W); Chaucha=above Chaucha (Azuay: 02°52'S, 79°23'W); Mazan=Río Mazan (Azuay: 02°52'S, 79°07'W).

Río Mazan is here considered west slope (it lacks 22 species restricted to the east slope), but its avifauna includes some eastern and southwestern (as well as endemic) elements.

Other abbreviations used in the text: ANSP (Academy of Natural Sciences of Philadelphia), MECN (Museo Ecuatoriano de Ciencias Naturales, Quito), ZMUC (Zoological Museum, University of Copenhagen), NK (Niels Krabbe) and BOP (Bent Otto Poulsen).

Altitudinal records

HIGHLAND TINAMOU *Nothocercus bonapartei*

One was observed at close range for several minutes on two occasions at 3075 m at Oyacachi. Previously only known up to c. 2200 m in Ecuador and Colombia (Robbins *et al.* 1987, Hilty & Brown 1986), but recorded to 2500 m in Venezuela (Meyer de Schauensee & Phelps 1978).



Figure 1. Map of Ecuador showing the five eastern slope (rhombuses) and the five western slope sites (large circles) investigated in this study. The two largest cities (squares) and some principal Andean cities (small circles) are also shown. The 3000 m contour is stippled.

ROADSIDE HAWK *Buteo magnirostris*

A pair was seen at Oyacachi and a pair at Anatenorio, both at 3000 m. Previously known up to *c.* 2500 m (own obs.).

AMETHYST-THROATED SUNANGEL *Heliangelus amethysticollis*

A single male was seen at 3025 m at Lagunillas. Previously known up to 2400 m in Ecuador (also at Lagunillas) (M. B. Robbins pers. comm.), but recorded up to 2600 m in immediately adjacent Peru (Parker *et al.* 1985), to 3000 m in Colombia and Venezuela (Hilty & Brown 1986, Meyer de Schauensee & Phelps 1978), and sighted by NK

to 3200 m in Cuzco, Peru (Fjeldså & Krabbe 1990). Its lower altitudinal limits throughout lie at 1800–2000 m.

EMERALD TOUCANET *Aulacorhynchus prasinus*

To 3250 m below Oyacachi, whence come three old specimens without exact altitudes given (Chapman 1926). Previously only definitely known up to 2750 m in Ecuador (Krabbe 1991), to 2200 m in Peru (Parker *et al.* 1985, Fjeldså & Krabbe 1990) but recorded to 3000 m (once to 3700 m) in Colombia (Hilty & Brown 1986).

BARRED ANTTHRUSH *Chamaeza mollissima*

A pair was observed at 3075 m at Oyacachi. Previously not known above 2300 m in Ecuador (own obs.), but in Colombia known to 3100 m (Hilty & Brown 1986).

BARRED BECARD *Pachyramphus versicolor*

Recorded to 3000 m at Oyacachi and to 3050 m on Toledo. The only previous record from above 2850 m in Ecuador is of a bird mist-netted and photographed (BOP, T. Læssøe) at 3500 m on Volcán Pichincha (Fjeldså & Krabbe 1990). In Colombia not reported above 2600 m (Hilty & Brown 1986), but known up to 2950 m in northern Peru (Parker *et al.* 1985).

SLATY-BACKED CHAT-TYRANT *Ochthoeca cinnamomeiventris*

At Lagunillas singing birds were observed to 3320 m. Previously known up to 3000 m (Fjeldså & Krabbe 1990). Occasionally strays higher: in Cordillera de Los Llanganates, southern Napo Province, one bird appeared at 3600 m in early May 1992, sang intensely for a few hours, and then flew down slope, not to be seen or heard there again over the next days (NK).

GREATER PEWEE *Contopus fumigatus*

To 3000 m at Oyacachi. Previously only known up to *c.* 2500 m in Ecuador (Krabbe 1991), but locally to 3000 m in Colombia (Hilty & Brown 1986).

BLACK-COLLARED JAY *Cyanolyca armillata*

Found to 3150 m at Oyacachi, whence originates a specimen taken in 1950 (ANSP) without an exact altitude. Otherwise only known in Ecuador from two specimens taken at Río Pun in northeastern Carchi or adjacent Sucumbíos Province (Salvadori & Festa 1899) without altitudes given, but probably between 2200 and 2600 m, and a specimen taken by J. C. Matheus at 2320 m at La Alegría below Pun (MECN) and sightings down to 2050 m below La Alegría (NK). The two species (*C. armillata* and Turquoise Jay *C. turcosa*) may thus replace each other altitudinally in the Río Pun valley, where the east slope forest meets the interandean forest. On the interandean slope not far south of the Río Pun valley *C. turcosa* occurs up to 3350 m (Robbins *et al.* 1987). At Oyacachi, however, we found *C. armillata* up to 3150 m, and no *C. turcosa*, so they apparently exclude each other

locally. In the next valley to the south of Oyacachi (Papallacta), *C. turcosa* occurs on the entire slope, at least down to below 2500 m (own obs.). Hilty & Brown (1986) reported *C. turcosa* from both slopes of Nariño, Colombia at 2600–3000 m, but did not provide any details of altitudinal distribution in eastern Nariño, where the two species overlap. Vocally, they differ distinctly (own obs.).

GLOSSY-BLACK THRUSH *Turdus serranus*

Mostly known from below 2800 m. Singing up to 3150 m at Intag and Anatenorio, and to 3350 m at Oyacachi. In mid-March 1996 several singing birds were tape-recorded as high as 3750 m at Loma Yanayacu on Volcán Pichincha (NK), where, despite many visits by birdwatchers, they had not been recorded before.

RUFOUS-BROWED PEPPERSHRIKE *Cyclarhis gujanensis*

One singing bird of the southeastern subspecies *contrerasi* was observed and tape-recorded at 3100 m on Páramos de Matanga. This form had previously not been found above 1900 m in Ecuador (own obs.).

BROWN-CAPPED VIREO *Vireo leucophrys*

Two birds, clearly a pair, were observed and their song and calls tape-recorded at 3150 m at Oyacachi. Previously not known above 2650 m in Ecuador (Krabbe 1991). In Colombia recorded up to 2800 m (Hilty & Brown 1986).

GRASS-GREEN TANAGER *Chlorornis riefferii*

Observed up to 3175 m at Intag and to 3500 m on Corazón. Previously known up to 2900 m in Ecuador (Krabbe 1991). In Colombia rarely recorded to 3300 m (Hilty & Brown 1986).

CHESTNUT-CAPPED BRUSH-FINCH *Buarremon brunneinucha*

Seen up to 3150 m on Toledo. The only previous record above 2750 m in Ecuador is of a bird that died in a mist-net at 3150 m at Acanamá, northern Loja Province (R. Williams, J. Tobias; skeleton in Salango Museum, NK preparation). No *Buarremon torquatus* was recorded at Toledo (see Remsen & Graves 1995).

Southward range extensions

RUFOUS-BANDED OWL *Ciccaba albitarsus*

Found at all five sites on the west slope, where it had previously not been found south of Pichincha (Chapman 1926).

RUFOUS-BELLIED NIGHTHAWK *Lurocalis rufiventris*

Found at Chaucha. Previously known only south to western Chimborazo on the west slope (Berlepsch & Taczanowski 1884). There is an unpublished record (by NK) from near Molleturo just north of Chaucha.

BUFF-WINGED STARFRONTLET *Coeligena lutetiae*

Found at Salinas. Only previous record from south of Pichincha on the Pacific slope is from western Cotopaxi (Krabbe 1991).

ANDEAN TIT-SPINETAIL *Leptasthenura andicola*

Found at 3250–3300 m at Lagunillas. It had been overlooked at this locality during earlier surveys (ANSP team pers. comm., own obs.), and undoubtedly also at Cerro Chinguela in immediately adjacent Peru (Parker *et al.* 1985). In Ecuador the species had previously been recorded south to Cajas in Azuay (Gretton in Robinson 1987, own obs.) (subspecies *andicola*), some 200 km north of Lagunillas. The northernmost Peruvian record (subspecies *peruviana*) is from Cordillera Blanca, Ancash, some 400 km south of Lagunillas (Fjeldså & Krabbe 1990). The Lagunillas birds may thus represent an undescribed subspecies.

BARRED FRUITEATER *Pipreola arcuata*

Recorded at Salinas. The southernmost previous record on the west slope is from Pichincha (Chapman 1926).

SLATY-BACKED CHAT-TYRANT *Ochthoeca cinnamomeiventris*

In Cordillera de Chilla, northwesternmost Loja Province, we observed this species between Selva Alegre and Manu. We also found it to 3050 m at Río Mazan. On the west slope previously not reported from south of Chimborazo (Chapman 1926). It has undoubtedly been overlooked on the Pacific slope in Azuay.

BLACK-CAPPED TYRANNULET *Phyllomyias nigrocapillus*

Found at Salinas and Chaucha. Previously not recorded south of Pichincha on the west slope (Chapman 1926).

RUFOUS WREN *Cinnycerthia unirufa*

Recorded at Salinas. On the west slope, previously known south to western Cotopaxi (Krabbe 1991).

BLACK-BACKED BUSH-TANAGER *Urothraupis stoltzmanni*

A flock of ten was observed in treeline scrub down to 3300 m at Matanga. Previously unrecorded south of Zapote-Najda mts. (Fjeldså & Krabbe 1986). Like Crescent-faced Antpitta *Grallaricula lineifrons* (see below), it undoubtedly ranges along the entire eastern Andes of Ecuador south to Río Zamora.

New localities for rare or little-recorded species**IMPERIAL SNIPE** *Gallinago imperialis*

Roding at all five eastern, and the two northernmost western sites. At five localities it had not been recorded earlier. In Ecuador the species appears to be continuously distributed along the entire east slope and, though as yet unrecorded in western Carchi, along the west slope south to Volcán Iliniza. The twelve Ecuadorian localities known are:

1. Intag, Imbabura, 00°20'N, 78°25'W, 3330–3350 m: present study (5–11 January 1995).
2. Volcán Pichincha, Pichincha, 00°08'S, 78°35'W, 3600–3800 m: Krabbe (1991, 1992). Roding only in the rainy season (October to May). NK collected a male specimen here on 8 March 1992 (MECN 6015). Although roding, it had only medium-enlarged testes. It had worn wings and tail, and was in heavy body moult. Measurements in mm: wing chord 155, wing flat 160, tail 55, bill from feathers 76, tarsus 35. Body mass 196 g. Only three other specimens exist, two of them without data (Terborgh & Weske 1972).
3. Volcán Corazón, Pichincha, 00°33'S, 78°43'W, 3150–3750 m: present study (17–24 January 1995).
4. Cerro Mongus, Carchi, 00°27'N, 77°52'W, 3200–3500 m: L. Petersson tape-recordings 5–6 July 1995 (Petersson 1996).
5. Below Oyacachi, Napo, 00°13'S, 78°02'W, 3350 m: present study (10–14 January 1996).
6. Río Anatenorio, Napo, 00°59'S, 78°17'W, 3300–3350 m: present study (18–22 January 1996).
7. Cordillera de los Llanganates, Napo, 01°06'S, 78°18'W, 3500 m: NK tape-recordings (26–28 May 1992).
8. Páramos de Matanga, Morona-Santiago, 03°16'S, 78°54'W, 3100–3300 m: NK tape-recordings (14–15 November 1992); present study (6–10 February 1996).
9. Acanamá, Loja, 03°40'S, 79°14'W, 3200 m: NK tape-recording (6 November 1992).
10. Cajanuma, Loja, 04°06'S, 79°09'W, 2800–3000 m: Pearman (1994) (7–10 December 1990); tape-recordings by R. Williams (January–February 1991); individual seen foraging and photographed by Poulsen (1993) (March 1992); chick found by M. Lysinger (February 1993).
11. Cerro Toledo, Zamora-Chinchipec, 04°23'S, 79°06'W, 3030–3350 m: present study (20–24 February 1996).
12. Cordillera Las Lagunillas, Zamora-Chinchipec, 04°46'S, 79°25'W, 3050–3150 m: NK tape-recordings (12–13 November 1992); present study (12–18 February 1996).

RED-FACED PARROT *Hapalopsittaca pyrrhops*

Two pairs with one and two young were observed at Páramos de Matanga. There are few known sites for this endangered parrot (Collar *et al.* 1992).

WHITE-THROATED SCREECH-OWL *Otus albobularis*

Recorded at all sites except Mazan and Lagunillas.

RUFOUS-BANDED OWL *Ciccaba albitarsus*

Recorded at all sites except Toledo.

RUFOUS-BELLIED NIGHTHAWK *Lurocalis rufiventris*

Recorded at all sites except Toledo and Salinas. Only doubtfully recorded at Mazan.

NEBLINA METALTAIL *Metallura odomae*

Netted at Toledo (3080–3350 m) and Lagunillas (3050–3350 m). Previous Ecuadorian records are summarized by Collar *et al.* (1992). There are as yet no specimens to document the reported sympatry of *M. williami* with *M. baroni* and *M. odomae* (Collar *et al.* 1992).

MOUNTAIN AVOCETBILL *Opisthoprora euryptera*

Found to be fairly common at Oyacachi and Anatenorio, uncommon at Toledo. Previously considered rare to uncommon throughout eastern Ecuador (Ridgely 1980, own obs., R. S. Ridgely pers. comm.). Rather inconspicuous and difficult to record except by its distinctive call or by mist-netting or observing near flowers of the genus *Centropogon* (Campanulaceae). *Contra* Fjeldså & Krabbe (1990), the species appeared to exploit no other source of nectar. On several occasions it was observed to feed on nectar from these flowers by piercing them near the base of the corolla. Its pointed, upturned bill shape may be an adaptation to this previously undescribed behaviour.

Ornelas (1994) has suggested that bill serrations are an adaptation for nectar robbing (facilitating 'illegal' access through corollas to protected nectaries). However, the ZMUC specimen of *Opisthoprora euryptera* does not have serrate tomia despite being a specialised nectar robber perforating the base of long-tubed corollas, and the species is not listed in Ornelas (1994) as a hummingbird with serrations on the tomia. Thus, serrations and pointed/upturned bills are distinct tools which may have either different functions (manipulation of insects and penetration of corollas, respectively) or a common function (corolla piercing). As stated by Ornelas (1994) more evidence is needed from ontogenetic, phylogenetic and behavioural studies to support one or the other of these views.

CRESCENT-FACED ANTPITTA *Grallaricula lineifrons*

A single bird was called in with tape-recordings of song on three occasions at 3320 m at Oyacachi, the type locality. It did not vocalise. At Matanga, where it had not been recorded before, we tape-recorded songs of it and of the generally lower-elevational *Grallaricula nana* in two adjacent valleys, both at 3085–3150 m, only one species in each valley. *G. lineifrons* was also tape-recorded higher, at 3250 m at Matanga. No altitude was given for the type specimen (Chapman 1926; *contra* Fjeldså & Krabbe 1990). All known records of *G. lineifrons* lie between 3000 and 3400 m altitude, in the southern Central Andes of Colombia and in the eastern Andes of Ecuador south to Río Zamora (Robbins *et al.* 1994).

PALE-FOOTED SWALLOW *Notiochelidon flavipes*

Found at Anatenorio, Toledo, and Lagunillas. These records fill out important distributional gaps in Ecuador of this overlooked cloud-forest swallow, which is probably more or less continuously distributed from Santa Cruz Department in Bolivia, through Peru, Ecuador and Colombia to Trujillo Province in Venezuela (Parker *et al.* 1985, Davis *et al.* 1994, Ryan & Lentino 1995).